

State of California

**ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

Revisions to the California Building Energy)
Efficiency Standards, California Code of)
Regulations, Title 24, Part 1 and Part 6)

Docket No. #03-BSTD-1

**COMMENTS OF
THE AIR-CONDITIONING AND REFRIGERATION INSTITUTE
TO THE CALIFORNIA ENERGY RESOURCES CONSERVATION AND
DEVELOPMENT COMMISSION ON
PROPOSED AMENDMENTS TO
TITLE 24 – CALIFORNIA ENERGY CODE**

November 3, 2003

The Air-Conditioning and Refrigeration Institute (ARI) submits this statement on the proposed revisions by the California Energy Resources Conservation and Development Commission (CEC) to the California Building Energy Efficiency Standards, California Code of Regulations, Title 24, Part 1 and Part 6.¹ These comments are presented without prejudice to the positions set forth in greater detail by ARI in its litigation against the CEC².

Incorrect Standard Referenced in Tables 112 A and B

Tables 112 A and B incorrectly list ARI 210/240-2003 as the test procedure for air-cooled air conditioners and heat pumps between 65,000 and 135,000 btu/h. The correct test procedure is ARI 340/360-2000.

¹ Express Terms – 15 Day Language to Title 24, California Code of Regulations, Part 1 and 6.

² *Air-Conditioning and Refrigeration Institute, et al. v. Energy Resources Conservation and Development Commission*, E.D. Cal. No. CIV S 02-2437 WBS PAN.

ARI standard 340/360 covers unitary products with cooling capacities equal or greater than 65,000 btu/h and ARI standard 210/240 covers unitary products less than 65,000 btu/h. Therefore, ARI 210/240 does not apply to unitary products greater than 65,000 btu/h as referenced in Table 112A and 112B. The references in Table 112 A for air-cooled air conditioners between 65,000 and 135,000 btu/h and in Table 112 B for air cooling heat pumps between 65,000 and 135,000 btu/h in both cooling and heating modes should be changed to ARI Standard 340/360.

Exception 1 to Section 123 should be expanded to cover other HVAC equipment

Exception 1 to Section 123 as currently drafted exempts factory-installed piping within HVAC equipment certified under sections 111 or 112 from the insulation requirements. By limiting the exception to only HVAC equipment certified under sections 111 or 112, the CEC is in fact requiring factory-installed piping within HVAC equipment not certified by the CEC to be insulated. ARI recommends that exception 1 be expanded to factory-installed piping within all HVAC equipment which performance ratings are certified by a nationally recognized certification program, whether they are regulated or not by the CEC.

ARI believes that it is not CEC's intention to limit exemption 1 only to equipment certified under sections 111 or 112. There are HVAC products such as room fan coils and unit ventilators with factory-installed piping, which are not regulated by the CEC, and for which exemption 1 will not apply. These products are tested and rated based on widely accepted industry standards (i.e.; ARI 440 and ARI 840). In the case of room fan coils and unit ventilators, their performance ratings are certified by ARI. Their energy performance (i.e.; cooling capacity and power input) is tested as part of the certification program, and consequently piping losses are accounted for in

the ratings. ARI understands that section 6.2.4.1.3 of ASHRAE 90.1-2001 has a similar exemption as exemption 1 to section 123 of Title 24. However, the intent of ASHRAE 90.1 was to exempt all HVAC equipment for which a test procedure exists that evaluates the energy performance of the equipment. This is definitely the case for room fan coils and unit ventilators. Consequently, we urge the CEC to amend exception 1 as follows:

EXEPTION 1 to Section 123: Factory-installed piping within all space-conditioning equipment which performance ratings are certified by a nationally recognized certification program ~~certified under Section 111 or 112.~~

Section 144 (c) 4 could increase rather than reduce energy usage

This new section requires fan motors below 1hp in series terminal units to be either electronically commutated (ECM), or have a minimum efficiency of 70% when rated in accordance with NEMA standard MG-1 at full load rating conditions. While ARI supports the use of energy efficient motors in applications such as series terminal units, we are concerned that the section, as drafted, mandates the use of a particular motor technology³ (i.e., ECM motors) when there is only one major manufacturer of such motors in the U.S. ARI also is concerned that the added section is targeting fractional horsepower motor applications in one type of air distribution systems only (i.e.; series terminals). Such a requirement could artificially push designers to opt for lower first cost, less efficient systems (e.g., parallel boxes).

A similar fan motor proposal was submitted to the ASHRAE 90.1 committee for consideration. Because of the concerns raised in the previous paragraph, the ASHRAE 90.1 Mechanical Subcommittee decided to table the proposal. The Subcommittee questioned whether 70% is the

³ Given that the upper efficiency limit of conventional fractional horsepower motors is in general well below 70%, the proposal as drafted is in a fact allowing just one option, i.e., ECM motors.

appropriate minimum efficiency and wanted to make sure that changes to the 90.1 standard would not drive designers away from series terminals and toward other less efficient air distribution systems. The ASHRAE 90.1 Mechanical Subcommittee is currently working with industry and other stakeholders in developing a proposal that encourages the design and installation of higher efficiency air distribution systems. Until such a proposal is finalized, ARI believes that Section 144 (c) 4 should be deleted in its entirety.

Respectfully submitted,

(Original signed by Stephen Yurek, General Counsel, ARI)

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